

REMARKS

The present Amendment is in response to the Examiner's Office Action (hereinafter referred to as "the Office Action") mailed August 1, 2008. Claims 2, 4, and 8-9 were cancelled in a previous paper. By this paper, claims 1, 6, and 7 are amended, no claims are cancelled and new claims 10-24 are added. Claims 1, 3, 5-7 and 10-24 are now pending in view of the above amendments. Of the pending claims, previously pending claims 1 and 6 and new claim 19 are independent claims.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicants' remarks are presented in the order in which the corresponding issues were raised in the Office Action.

I. GENERAL CONSIDERATIONS

A. Claim Amendments

With particular reference to the claim amendments, Applicants note that while claims 1, 6, and 7 have been amended herein, such amendments have been made in the interest of expediting the allowance of this case. Notwithstanding, Applicants may, on further consideration, determine that claims of broader scope than those now presented are supported. Accordingly, Applicants hereby reserve the right to file one or more continuing applications with claims broader in scope than the claims now presented.

Consistent with the points set forth above, Applicants submit that neither the claim amendments set forth herein, nor any other claim amendments, claim cancellations, or statements advanced by the Applicants in this or any related case, constitute or should be construed as, an implicit or explicit surrender or disclaimer of claim scope with respect to the cited, or any other, references.

B. Remarks

Applicants respectfully note that the remarks herein do not constitute, nor are they intended to be, an exhaustive enumeration of the patentable distinctions between any cited references and the invention, example embodiments of which are set forth in the claims of this application. Rather, and in consideration of the fact that various factors make it impractical to enumerate all the patentable distinctions between the invention and the cited art, as well as the

fact that the Applicants have broad discretion in terms of the identification and consideration of the base(s) upon which the claims distinguish over the cited references, the distinctions identified and discussed herein are presented solely by way of example. Consistent with the foregoing, the discussion herein is not intended, and should not be construed, to prejudice or foreclose contemporaneous or future consideration by the Applicants, in this case or any other, of additional or alternative distinctions between the invention and the cited references; and/or, the merits of additional or alternative arguments.

Applicants note as well that the remarks, or a lack of remarks, set forth herein are not intended to constitute, and should not be construed as, an acquiescence, on the part of the Applicants: as to the purported teachings or prior art status of the cited references; as to the characterization of the cited references advanced by the Office Action; or as to any other assertions, allegations or characterizations made by the Office Action at any time in this case. Applicants reserve the right to challenge the purported teachings and purported prior art status of the cited references at any appropriate time.

II. Rejection Under 35 U.S.C. § 112, Second Paragraph

The Office Action rejects claim 1 under 35 U.S.C. § 112, Second Paragraph for indefiniteness on the grounds that there is no antecedent basis for the term "the filter" in line 8 of the claim. In response, Applicants have amended claim 1 as noted above to recite "filtering the pulses by way of a filter" in line 4 of the claim. Accordingly, Applicants respectfully submit that the antecedent basis problem has been solved and this rejection should be withdrawn.

III. Rejection Under 35 U.S.C. § 103

The Office Action rejects claims 1, 3, and 5-7 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent Application Publication No. 2003/0165341 to Bulow (hereinafter referred to as "Bulow") in view of U.S. Patent No. 6,654,152 to Jacobowitz (hereinafter referred to as "Jacobowitz"). Applicants traverse this assertion for the reasons that will now be explained.

According to the applicable statute, a claimed invention is unpatentable for obviousness if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

art.” 35 U.S.C. § 103(a) (2005); *Graham v. John Deere Co.*, 383 U.S. 1, 14 (1966); MPEP 2142. Obviousness is a legal question based on underlying factual determinations including: (1) the scope and content of the prior art, including what that prior art teaches explicitly and inherently; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. *Graham*, 383 U.S. at 17-18; *In re Dembiczak*, 175 F.3d 994, 998 (Fed. Cir. 1999).

“The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.” MPEP 2142 (2007). Analysis supporting a rejection under 35 U.S.C. §103(a) should be made explicit. *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, (2007). Moreover, the Patent Office must identify a reason (such as motivation) why a person of ordinary skill in the art at the time of the invention would have combined the prior art elements in the manner claimed. *Id.* “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id. quoting In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006); *see also* MPEP 2142. A court should be wary of reasoning based on hindsight. *See Graham*, 383 U.S. at 36.

It is the initial burden of the PTO to demonstrate a *prima facie* case of obviousness. If the PTO does not set forth a *prima facie* case of obviousness, the Applicants are under no obligation to submit evidence of nonobviousness. MPEP 2142 (emphasis added).

As shown above, Applicants have amended independent claims 1 and 6 to recite in part a filter that gives rise to the pulses having a temporal profile with a minimum substantially in the center of each of the time slots adjacent to the time slot for that pulse and with an oscillating tail that extends from the minimum to each of the time slots adjacent to the time slots having the minimum that are not the time slot for the pulse. (Emphasis added). Support for such amendments is found at least in Figure 4b, page 2, lines 4-9, and page 5, lines 6-13 of the originally filed PCT application.

The combination of Bulow and Jacobowitz, however, does not teach or suggest a substantially Sinc shaped temporal profile, nor does the combination render a substantially Sinc shaped temporal profile obvious. For example, the Office Action relies primarily on Figure 4c of Bulow to show a temporal profile with a minimum substantially in the center of each of the time slots adjacent to the time slot for that pulse as recited in formerly pending independent claims 1

and 6. Even if Figure 4c does show such a temporal profile, which as discussed in the last Office Action response the Applicants do not concede, it is clear from Figure 4c that the shown signal patterns do not include an oscillating tail. As shown and as discussed in paragraph [0040] of Bulow, Figure 4c illustrates an eye diagram of the output signal of the conversion filter CF over two bit periods. That is, the eye diagram shows pulse width over time. Accordingly, the portion of the signals shown as rising from either 0.5 or 1.5 on the x-axis cannot be considered an oscillating tail as both of these signal portions are merely the beginning of the next pulse. This is clearly seen for the signal portion rising from 0.5 and would be seen for the signal portion rising from 1.5 if the figure were large enough to show a third pulse.

According, since these signal portions are not oscillating tails, they do not extend from the minimum to the time slots adjacent to the time slots having the minimum. However, even if it were argued that these signal portions are an oscillating tail, these signal portions clearly do not have a first portion of the oscillating tail that rises as it extends from the minimum to a local maximum and a second portion of the oscillating tail that falls from the local maxima as it crosses into the time slots adjacent to the time slots having the minimum as is recited in newly added dependent claims 13 and 18, which depend from independent claims 1 and 6 respectively. Support for claims 13 and 18 (and newly added claim 21) is found at least in Figure 4b of the originally filed PCT application.

Applicants further note that Jacobowitz does not teach or suggest a filter that gives rise to the pulses having a temporal profile with a minimum substantially in the center of each of the time slots adjacent to the time slot for that pulse and with an oscillating tail that extends from the minimum to the time slots adjacent to the time slots having the minimum and is not cited by the Office Action as teaching such. As mentioned in the Office Action, Jacobowitz has been cited to show filter detuning. Even assuming *arguendo* that Jacobowitz does show filter detuning, Applicants have been unable to find any teaching or suggestion in the reference about a temporal profile as cited in amended independent claims 1 and 6. Applicants note that claims 1 and 6 have been amended so that there is no longer any recitation of filter detuning.

Thus, based on the above, Applicants respectfully note that the combination of Bulow and Jacobowitz does not teach or suggest or otherwise render obvious claims 1 and 6. That is, neither Bulow nor Jacobowitz, either singularly or in combination, teach or suggest all the elements of independent claims 1 and 6. Accordingly, Applicants respectfully request that the

obviousness rejection be withdrawn from independent claims 1 and 6 and dependent claims 3, 5, and 7.

IV. New Claims

As shown above, Applicants have added new claims 10-24, of which claim 19 is an independent claim. Applicants note that support for the new claims is found on page 3-6 of the originally filed application.

Regarding new independent claim 19, Applicants note that this claim recites a substantially Sinc shaped temporal profile amongst other limitations. Applicants also note that it is clear from Figure 4c of Bulow, which is primarily used by the Office Action to show a temporal profile, that the shown signal patterns are clearly not Sinc shaped. As is known in the art, Sinc shaped profiles typically include an oscillating tail and include a pointed global maximum or at least a global maximum that does not include a local minima. As shown in Bulow Figure 4c, the signal patterns do include local minima between the two global maximums. Applicants also note Jacobowitz does not teach or suggest a substantially Sinc shaped temporal profile. Thus, based on the above, Applicants respectfully note that the combination of Bulow and Jacobowitz does not teach or suggest or otherwise render obvious claim 19 as neither Bulow nor Jacobowitz, either singularly or in combination, teach or suggest all the elements of independent claim 19. Applicants note that new dependent claims 20-24 depend from new independent claim 19 and are allowable for at least the reasons that independent claim 19 is allowable.

Regarding new dependent claims 10-13, these claims depend from independent claim 1 and are allowable for at least the reasons discussed above in relation to independent claim 1.

Regarding new dependent claims 14-18, these claims depend from independent claim 6 and are allowable for at least the reasons discussed above in relation to independent claim 6.

CONCLUSION

In view of the foregoing, Applicants believe the claims as presently pending are in allowable form and that every issue raised by the Office Action has been addressed. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorneys.

Dated this 11th day of December, 2008.

Respectfully submitted,

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